

## PATENT COOPERATION TREATY

From the  
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

To:

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PCT

NOTIFICATION OF TRANSMITTAL OF  
THE INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT

(PCT Rule 71.1)

Date of mailing  
(day/month/year)

06.09.2004

Applicant's or agent's file reference  
HM/13422.110

## IMPORTANT NOTIFICATION

International application No.  
PCT/CA 03/00919

International filing date (day/month/year)  
17.06.2003

Priority date (day/month/year)  
18.06.2002

Applicant  
FALCONBRIDGE LIMITED et al.

1. The applicant is hereby notified that this International Preliminary Examining Authority transmits herewith the international preliminary examination report and its annexes, if any, established on the international application.
2. A copy of the report and its annexes, if any, is being transmitted to the International Bureau for communication to all the elected Offices.
3. Where required by any of the elected Offices, the International Bureau will prepare an English translation of the report (but not of any annexes) and will transmit such translation to those Offices.
4. **REMINDER**

The applicant must enter the national phase before each elected Office by performing certain acts (filing translations and paying national fees) within 30 months from the priority date (or later in some Offices) (Article 39(1)) (see also the reminder sent by the International Bureau with Form PCT/IB/301).

Where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary examination report. It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned.

For further details on the applicable time limits and requirements of the elected Offices, see Volume II of the PCT Applicant's Guide.

The applicant's attention is drawn to Article 33(5), which provides that the criteria of novelty, inventive step and industrial applicability described in Article 33(2) to (4) merely serve the purposes of international preliminary examination and that "any Contracting State may apply additional or different criteria for the purposes of deciding whether, in that State, the claimed inventions is patentable or not" (see also Article 27(5)). Such additional criteria may relate, for example, to exemptions from patentability, requirements for enabling disclosure, clarity and support for the claims.

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Name and mailing address of the international  
preliminary examining authority:



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## PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT  
(PCT Article 36 and Rule 70)



Applicant's or agent's file reference HM/13422.110	<b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/PEA416)	
International application No. PCT/CA 03/00919	International filing date (day/month/year) 17.06.2003	Priority date (day/month/year) 18.06.2002
International Patent Classification (IPC) or both national classification and IPC C25C7/02		
Applicant FALCONBRIDGE LIMITED et al.		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 5 sheets, including this cover sheet.
- ☒ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 2 sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the opinion
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand  04.12.2003	Date of completion of this report  06.09.2004
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized Officer  Teppo, K-M Telephone No. +49 89 2399-8130 

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**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT**

International application No. **PCT/CA 03/00919**

**I. Basis of the report**

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

**Description, Pages**

1-9 as originally filed

**Claims, Numbers**

1-12 received on 19.08.2004 with letter of 17.08.2004

**Drawings, Sheets**

1/2-2/2 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
- ☐ the claims, Nos.:
- ☐ the drawings, sheets:

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5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

*(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)*

6. Additional observations, if necessary:

**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

1. Statement

Novelty (N)	Yes: Claims	2-7, 9-12
	No: Claims	1, 8
Inventive step (IS)	Yes: Claims	4-7, 10, 11
	No: Claims	1-3, 8, 9, 12
Industrial applicability (IA)	Yes: Claims	1-12
	No: Claims	

2. Citations and explanations

**see separate sheet**

**Re Item V**

**Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

1. Claim 8 does not meet the requirements of Article 6 PCT in that the matter for which protection is sought is not clearly defined. The claim attempts to define the subject-matter in terms of the result to be achieved which merely amounts to a statement of the underlying problem: "securing...so as to overlay the area...defining a cavity...". The technical features necessary for achieving this result should be added i.e. as defined starting on p. 7, that the securing and the forming of the cavity is achieved by two pairs of weldings. This feature should also be added to the independent apparatus claim in order to avoid further clarity objections due to obscurity.

2. The wording of claim 12 does not meet the requirements of Article 6 PCT in that it has no antecedent. There is no "attaching step" in claim 8. If the "securing step" is meant then claim 12 should be accordingly corrected.

3. Documents D1 and D2 both disclose a cathode assembly for use in the refining of metals (for D1 see claim 1 and col. 4, l. 30-36; for D2, see claim 1 and col. 3, l. 39-46), comprising:

a substantially flat deposition plate attached along an upper edge thereof by soldering to an elongate hanger bar thereby defining a connection (for D1, see fig. 3 and 4, claim 2; for D2 see fig. 3 and 4, claim 1);

a protective cladding abutting said deposition plate and at least partially surrounding said hanger bar such that a cavity is defined in the region of said connection; and the cladding is attached to said deposition plate by means of a pin (for D1, see fig. 3 and claims 2 and 6; for D2, see fig. 3 and col. 3, l. 9-29);

a corrosion resistant material filling said cavity (fig. 3 and col. 4, l. 1-9; for D2, see col. 3, l. 20-29).

It is emphasized that in both documents D1 and D2 as seen in the cited paragraphs (for D1 see col. 4, l. 30-36; for D2, see col. 3, l. 39-46), the anodes are connected to function as a cathode. These anodes thus can be regarded as cathodes! Furthermore, the independent claims state no restriction on the materials of the deposition plate.

Therefore, the subject-matter of claims 1 and 8 is not regarded as novel in light of documents D1 and D2, Art. 33(2) PCT.

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT - SEPARATE SHEET**

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4. Documents D1 and D2 both mention that in the prior art the welding is used to join the plate (for D1, see col. 1, l. 34 and for D2, see col. 1, l. 21), thus this feature cannot be regarded as offering a special technical effect.  
Hence, the subject-matter of claims 2-3, 9 and 12 is not regarded as inventive, Art. 33(3) PCT.
5.
  - a) Contrary to the requirements of Rule 5.1(a)(ii) PCT, the relevant background art disclosed in the documents D1 and D2 is not mentioned in the description, nor are these documents identified therein.
  - b) The wording "spirit of the invention" occurring in the description (p. 9, last paragraph) casts doubt as to the extent by which the description supports the claims (Art. 6 PCT) and should be deleted (Guidelines C III 4.3a).
6. Provisionally novelty and inventive step could be acknowledged if the applicant overcomes the clarity objections and defines the material filling the cavity into the wording of the independent claims.

**WHAT IS CLAIMED IS:**

1. A cathode for use in the refining of metals, comprising:  
a substantially flat deposition plate fixedly attached along an upper edge thereof to an elongate hanger bar thereby defining a connection;  
a protective cladding abutting said deposition plate and at least partially surrounding said hanger bar such that a cavity is defined in the region of said connection; and  
a corrosion resistant material filling said cavity.
2. The cathode as recited in claim 1, wherein said deposition plate is attached to said hanger bar by means of at least one weld.
3. The cathode as recited in claim 1, wherein said protective cladding is preformed.
4. The cathode as recited in claim 1, wherein said corrosion resistant material is an epoxy resin.
5. The cathode as recited in claim 1, wherein said deposition plate and said cladding are fabricated from stainless steel.
6. The cathode as recited in claim 1, wherein said cladding is attached to said deposition plate by means of at least one weld.
7. The cathode as recited in claim 1, wherein an inverted v-profile is machined in a lower edge of said deposition plate.
8. A method for fabricating a cathode for use in the refining of metals, said cathode being of the type comprising a deposition plate for electrodepositing

metals, said method comprising the steps of:

- (a) providing a substantially flat deposition plate having an upper edge;
- (b) fastening an elongate hanger bar on said upper edge of said deposition plate, thereby providing a deposition plate assembly;
- (c) securing a protective cladding to said deposition plate assembly so as to substantially overlay the area of fastening between said hanger bar and said upper edge of said deposition plate, thereby defining a cavity between said cladding and said deposition plate assembly; and
- (d) filling said cavity with a corrosion resistant material thereby providing a fabricated cathode.

9. The method for fabricating a cathode as in claim 8, wherein said fastening step includes welding said upper edge to said hanger bar.

10. The method for fabricating a cathode as in claim 8, wherein said filling step comprises boring at least one hole in said protective cladding and injecting a liquid phase of said corrosion resistant material into said cavity, said corrosion resistant material subsequently hardening into a solid phase.

11. The method for fabricating a cathode as in claim 10, wherein said corrosion resistant material is an epoxy resin.

12. The method for fabricating a cathode as in claim 8, wherein said attaching step comprises welding said cladding to said deposition plate by means of at least one weld.